THOMSON MULTI MEDIA

Brandt FERGUSON SABA TELEFUNKEN THOMSON

TV

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

42WS90E3

Plasma

WARNING : *Before servicing this chassis please read the safety recommendations.*
ATTENTION : *Avant toute intervention sur ce châssis, lire les recommandations de sécurité.*
ACHTUNG : *Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.*
ATTENZIONE : *Prima di intervenire sullo chassis, leggere le norme di sicurezza.*
IMPORTANTE : *Antes de cualquier intervención, leer las recomendaciones de seguridad.*

Code : 351 477 60 - 0401 / 00M - Wysius Print.

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Do not disconnect modules when they are energized!
Repairs on power supply section are to be carried out only with isolating transformer.

Ne pas retirer les modules lorsqu' ils sont sous tension. N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch Mode) qu'au travers d'un transformateur d'isolement.

Module nicht bei eingeschaltetem Gerät entfernen!
Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

Non scollegare le piastre quando sono alimentate!
Per le riparazioni sulla sezione alimentatore, utilizzare un trasformatore isolatore.

No desconectar los módulos cuando están activados. Las reparaciones en la sección de alimentación de energía deben ser ejecutadas solamente con un transformador de separación.

⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be garanteed.

Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraine la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol ⚠ gekennzeichnet) nicht durch Original - Ersatzteile ersetzt werden, erlischt die Haftung des Herstellers.

La sostituzione dei componenti di sicurezza (evidenziati con il segno ⚠) con componenti non omologati secondo la norma CEI 65 comporta la non conformitá dell'apparecchio. In tal caso è "esclusa la responsabilità " del costruttore.

La sustitución de elementos de seguridad (marcados con el simbolo ⚠) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

MEASUREMENT CONDITIONS - CONDITIONS DE MESURES - MESSBEDINGUNGEN CONDIZIONI DI MISURA - CONDICIONES DE MEDIDAS

RECEIVER :
On UHF,input level : 1 mV, bar test pattern :
- PAL, I standard, 100% white.

Via the scart socket, input level : 1 Vpp, bar test pattern :

Colour, contrast and brightness at mid-position, sound at minimum.
Programme selected : PR 01.

DC voltages measured between the point and earth using a digital voltmeter.

RECEPTEUR :
En UHF, niveau d'entrée 1 mV mire de barres
- SECAM, Norm L, Blanc 100%.

Par la prise Péritélévision, niveau d'entrée 1 Vcc, mire de barres .

Couleur, contraste, lumière à mi-course, son minimum.
Programme affecté PR 01.

Tensions continues relevées par rapport à la masse avec un voltmètre numérique.

EMPFÄNGER :
Bei UHF Eingangspegel 1 mV, Farbbalken :
- PAL, Norm G, Weiss 100%.

Über die Scartbuchse : Eingangspegel 1 Vss, Farbbalken :

Farbe, Kontrast, Helligkeit in der Mitte des Bereichs, Ton auf Minimum.
Zugeordnetes Programm PR 01.

Gleichspannungen mit einem digitalen Voltmeter zur Masse gemessen.

RICEVITORE :
In UHF, livello d'entrata 1 mV, monoscopio barre :
- PAL, norma G. bianco 100%.

Via SCART, livello d'entrata 1 Vpp, monoscopio barre :

Colore, Contrasto, Luminositá media, Suono minimo.
Programma selezionato PR 01.

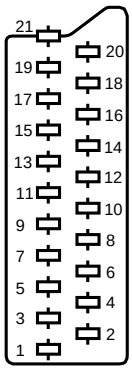
Tensioni continue rilevate rispetto alla massa con un voltmetro digitale.

RECEPTOR :
En UHF, nivel de entrada 1 mV, mira de barras :
- PAL, norma G, blanco 100%.

Por la toma Peritelevision, nivel de entrada 1 Vpp mira de barra.

Color, Contraste, luz a mitad de carrera, Sonido minimo.
Programa afectado PR 01.

Tensiones continuas marcadas en relacion a la masa con un voltimetro digital.



NOTE : (MAIN) *... etc. identifies each* pcb module.

NOTE : (MAIN) *... etc. repères des platines constituant l'appareil.*

HINWEIS : (MAIN) *... usw. Kennzeichnung der Platinen, aus denen das Gerät zusammengesetzt ist.*

NOTA : (MAIN) *... ecc. sigla delle piastre dell' apparecchio.*

NOTA : (MAIN) *... etc. marcas de las placas que constituyen el aparato.*

		ENGLISH	FRANÇAIS	DEUTSCH	ITALIANO	ESPAÑOL
1	⊖	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
2	⊕	AUDIO "R"	AUDIO "D"	AUDIO "R"	AUDIO "D"	AUDIO "D"
3	⊖	AUDIO "L"	AUDIO "G"	AUDIO "L"	AUDIO "S"	AUDIO "I"
4	⊥	AUDIO	AUDIO	AUDIO	AUDIO	AUDIO
5	⊥	"BLUE"	"BLEU"	"BLAU"	"BLU"	"AZUL"
6	⊕	AUDIO "L" MONO	AUDIO "G" MONO	AUDIO "L" MONO	AUDIO "S" MONO	AUDIO "I" MONO
7	⊕	"BLUE"	"BLEU"	"BLAU"	BLU	AZUL
8	⊕	SLOW SWITCH	COMMUT. LENTE	AV UMSCHALTUNG	"COMMUTAZIONE LENTA"	"CONMUTACION LENTA"
9	⊥	"GREEN"	"VERT"	"GRÜN"	"VERDE"	"VERDE"
10	NC					
11	⊕	"GREEN"	"VERT"	"GRÜN"	"VERDE"	"VERDE"
12	NC					
13	⊥	"RED"	"ROUGE"	"ROT"	"ROSSO"	"ROJA"
14	NC					
15	⊕	"RED"	"ROUGE"	"ROT"	"ROSSO"	"ROJA"
16	⊕	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	"COMMUTAZIONE RAPIDA"	"CONMUTACION RAPIDA"
17	⊥	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
18	⊥	FAST SWITCH	COMMUT. RAPIDE	AUSTASTUNG	"COMMUTAZIONE RAPIDA"	"CONMUTACION RAPIDA"
19	⊖	VIDEO	VIDEO	VIDEO	VIDEO	VIDEO
20	⊕	VIDEO OR "SYNC"	VIDEO SYNCHRO	VIDEO ODER SYNCHRO	VIDEO O SINCRO	VIDEO O SINCRO
21	⊖	PLUG SCREEN BOX	BLINDAGE PRISE	ABSCHIRMUNG DES STECKERS	INVOLUCRO METAL-LICO DELLA PRESA	BLINDAJE DEL ENCHUFE

⊕ : INPUT - ENTRÉE - EINGANG - ENTRATA - ENTRADA • ⊖ : OUTPUT - SORTIE - AUSGANG - USCITA - SALIDA • ⊥ : EARTH - MASSE - MASSE - MASSA - MASA

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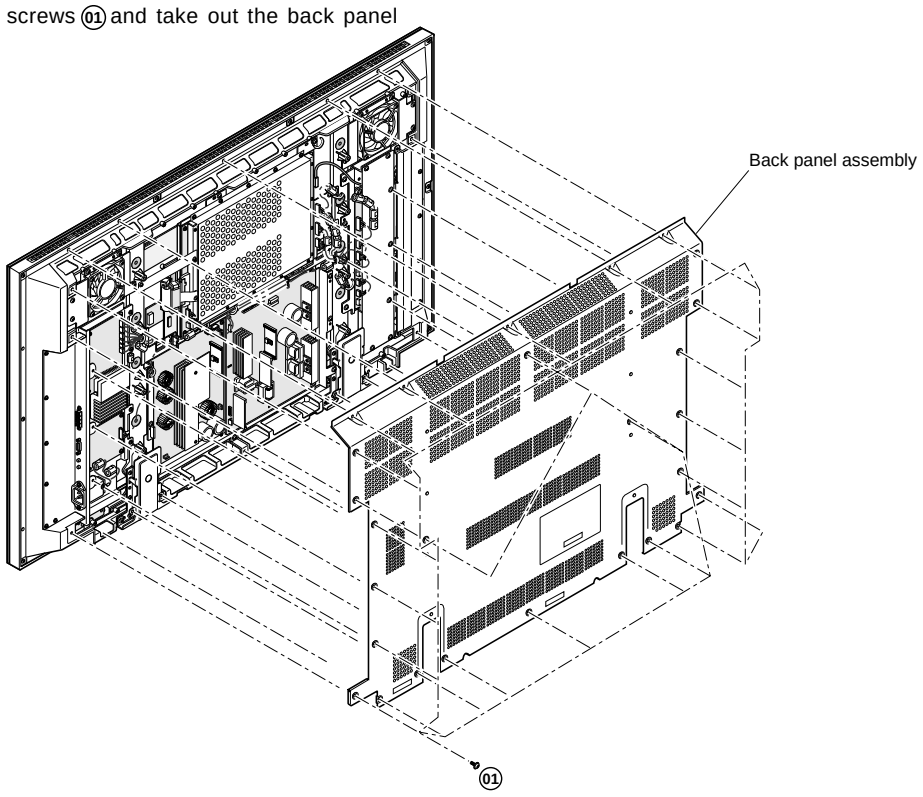
DISASSEMBLY

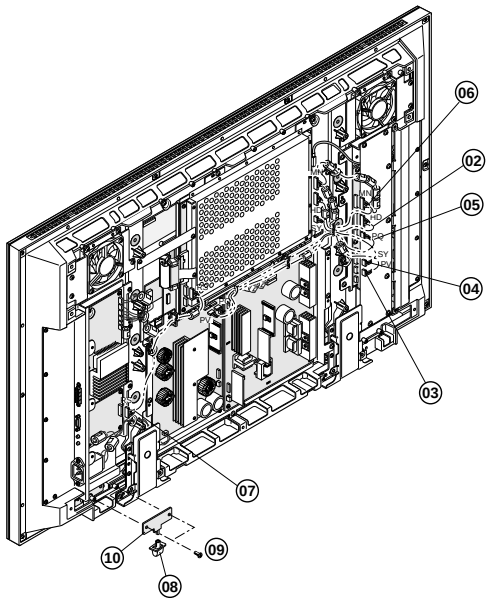
1. Removing the back panel assembly

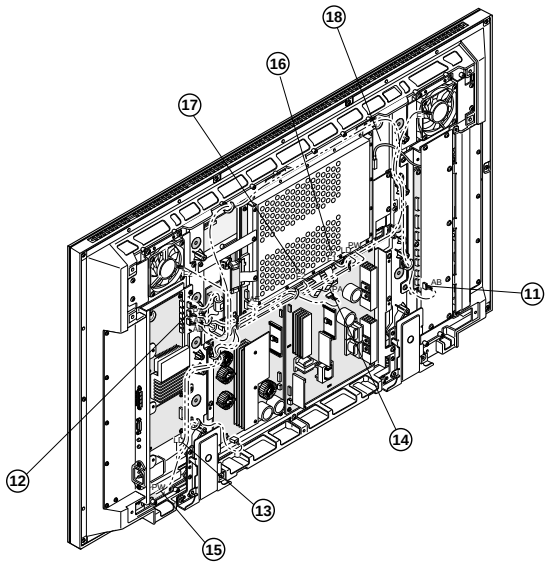
- Remove the 27 screws (01) and take out the back panel assembly.



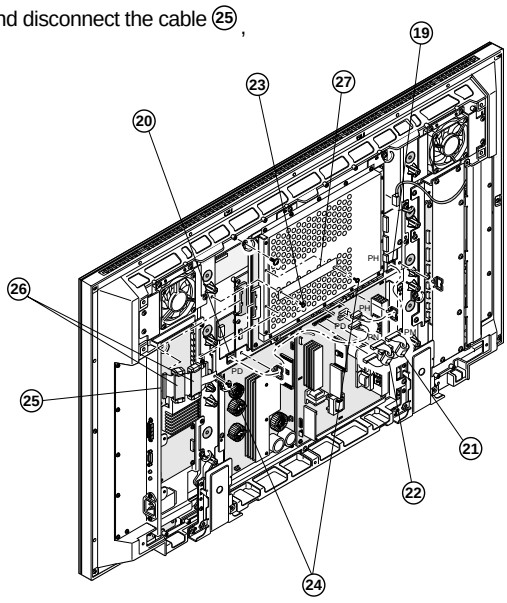
2. Removing the connectors

- Remove the connectors (02) , (03) , (04) , (05) , (06) , (07) ,
- Remove the button (08) and the screw (09) pull the part (10) ,
- Remove the connectors (11) , (12) , (13) , (14) , (15) ,
- Remove the connectors (16) et (17) ,
- Remove the connector (18) ,



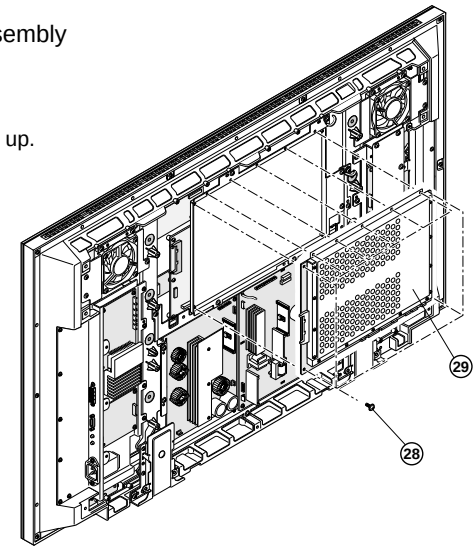


- Remove the connectors ⑲ , ⑳ , ㉑ , ㉒ ,
- Remove the screws ㉓ and ㉔ , and disconnect the cable ㉕ ,
- Remove the parts ㉖ and the earth plate (pulse) ㉗ .



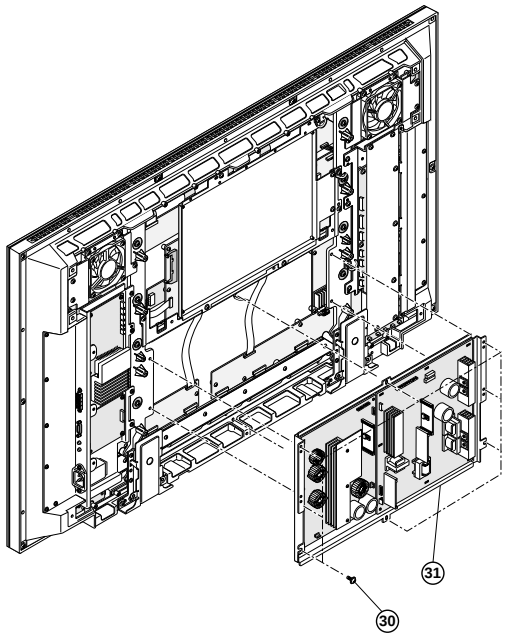
3. Removing the main module assembly

- Remove the 8 screws ㉘ ,
- Lift the main module assembly ㉙ up.



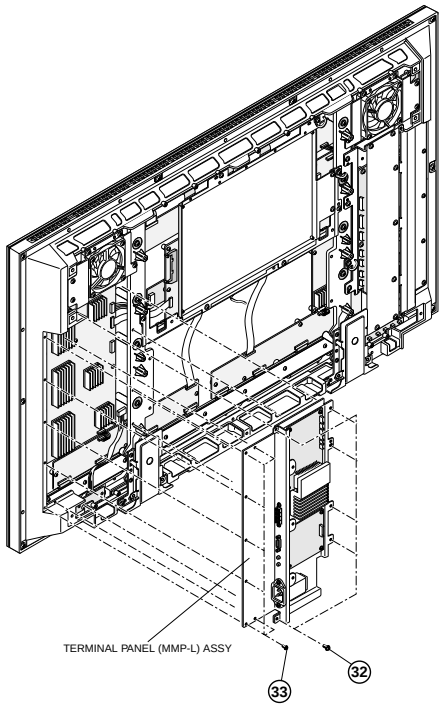
4. Removing the power unit

- Remove the 8 screws ㉚ ,
- Lift the power unit ㉛ up.



5. Removing the left terminal panel assembly

- Remove the 6 screws ㉜ and the 7 screws ㉝ ,
- Remove the terminal panel (MMP-L) assembly.



5.1 Removing the audio amplifier module

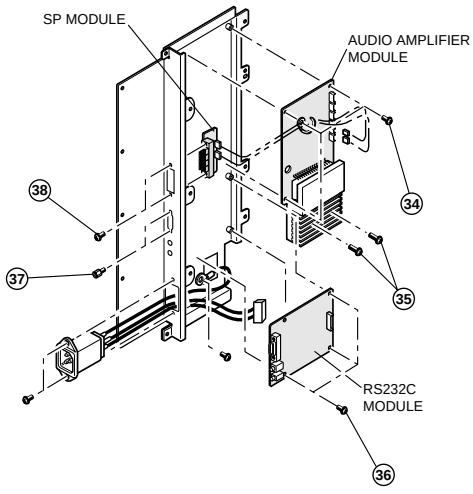
- Remove the 3 screws ㉞ ,
- Remove the 2 screws ㉟ ,
- Take out the audio amplifier module.

5.2 Removing the RS232C module

- Remove the 3 screws ㊱ ,
- Remove the 2 screws ㊲ ,
- Take out the RS232C module.

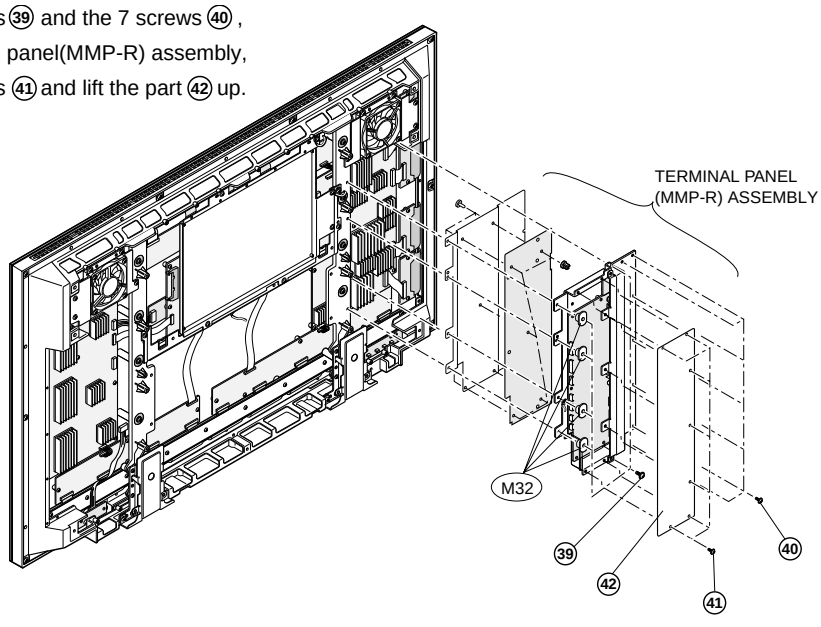
5.3 Removing the speaker sockets

- Unscrew the 2 screws ㊳ ,
- Remove the speaker sockets.



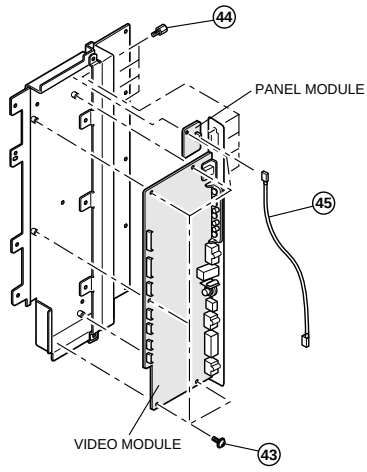
6. Removing the right terminal panel assembly

- Remove the 6 screws ㊴ and the 7 screws ㊵ ,
- Take out the terminal panel(MMP-R) assembly,
- Remove the 7 screws ㊶ and lift the part ㊷ up.



6.1 Removing the video module

- Unscrew the 5 screws (43) and the 2 screws (44) ,
- Take out the video module.

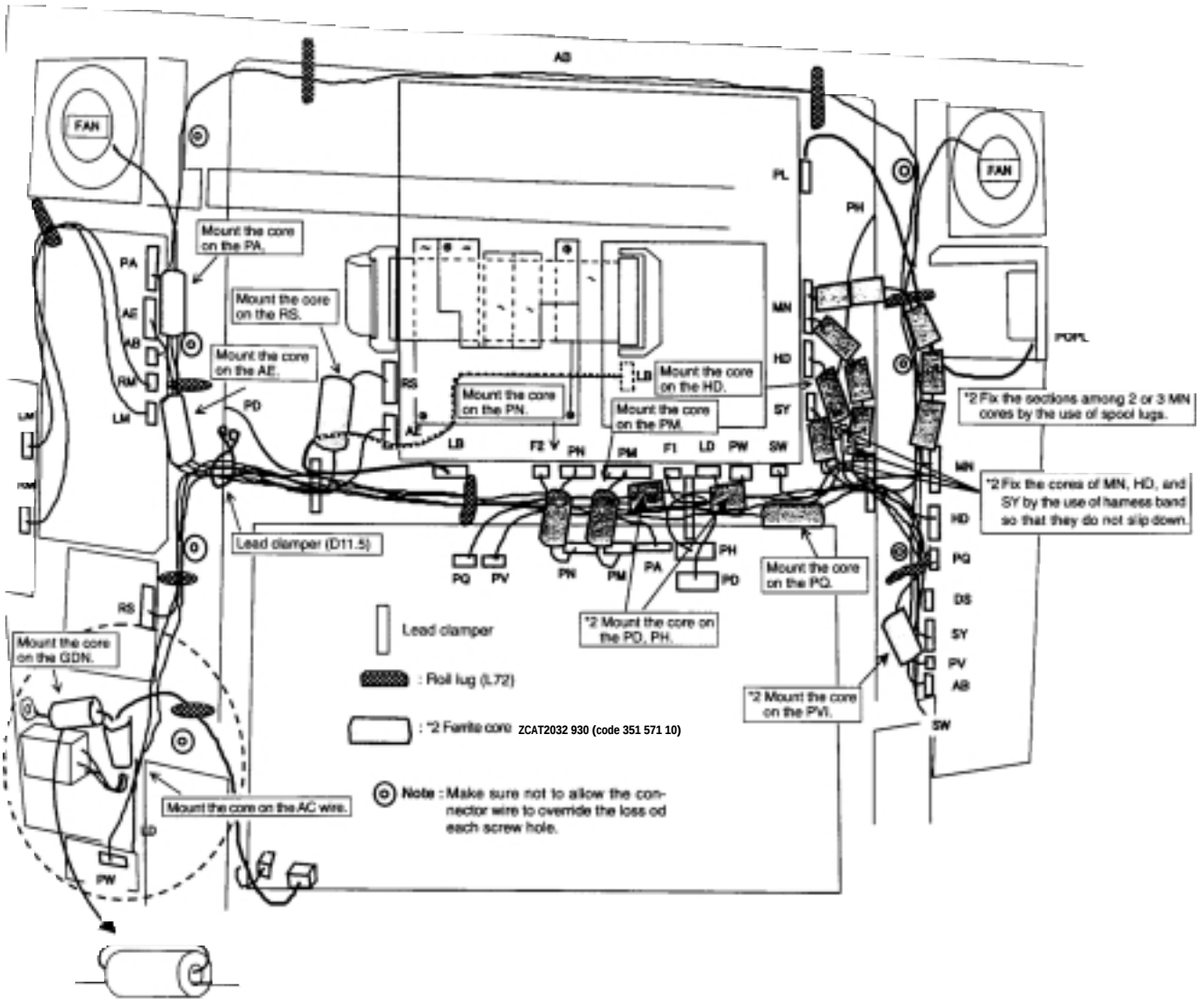


6.2 Removing the panel module

- Remove the 2 screws (44),
- Disconnect the wire (45),
- Take out the panel module.

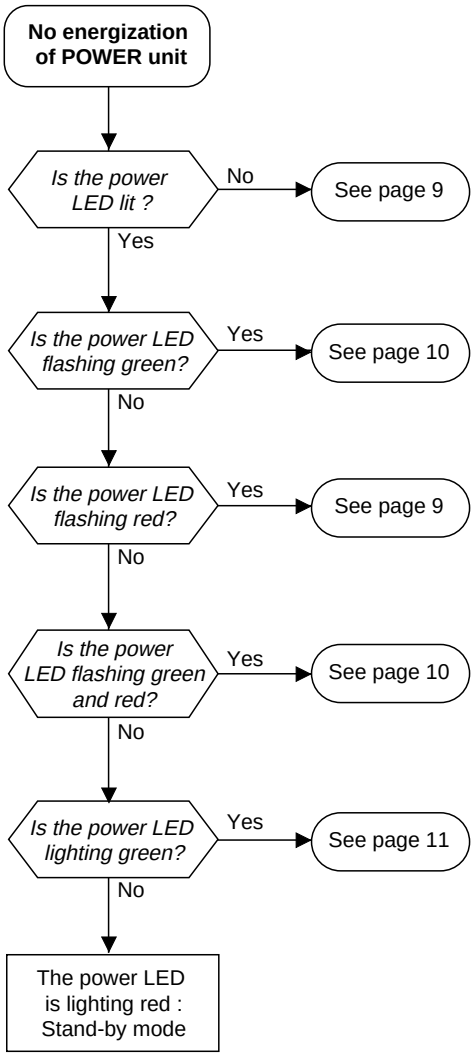
WIRE LOCATION

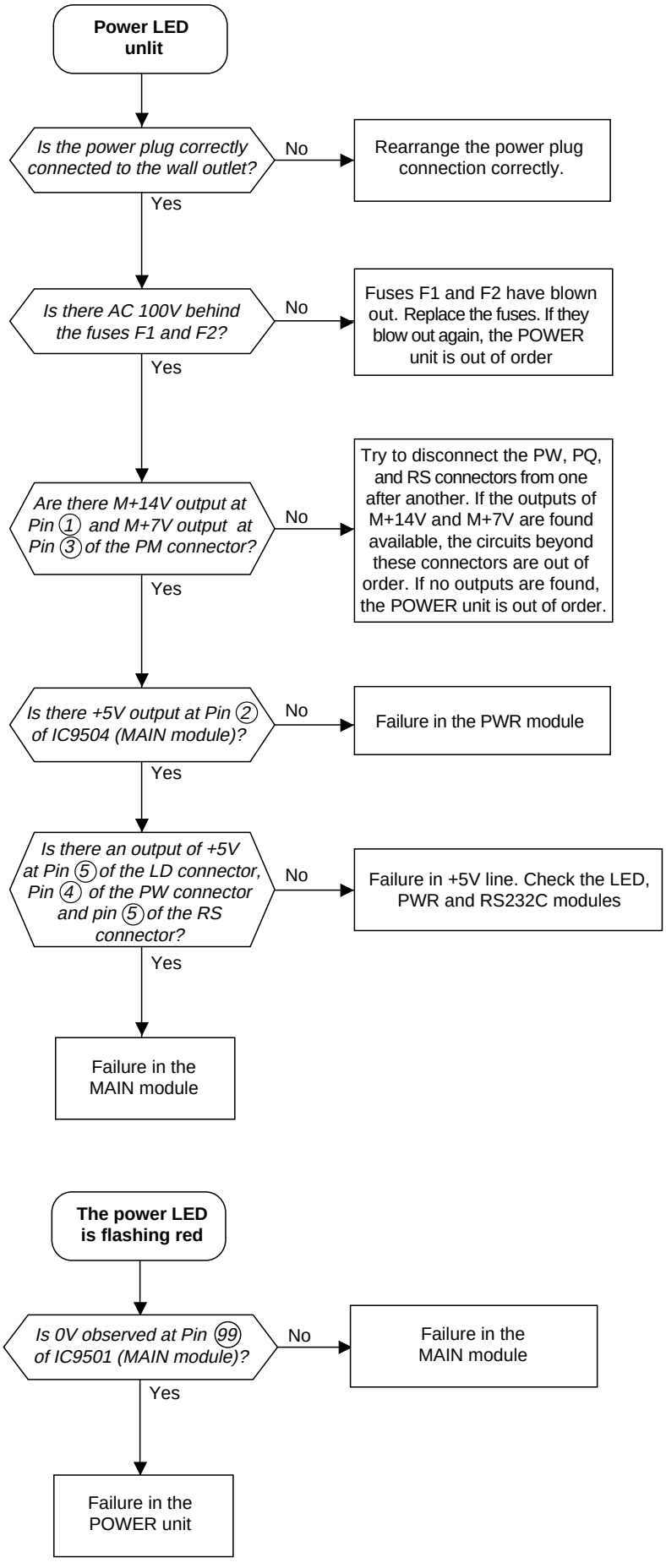
After replacement of the modules refer to the below diagram to mount ferrites and connect the modules again.

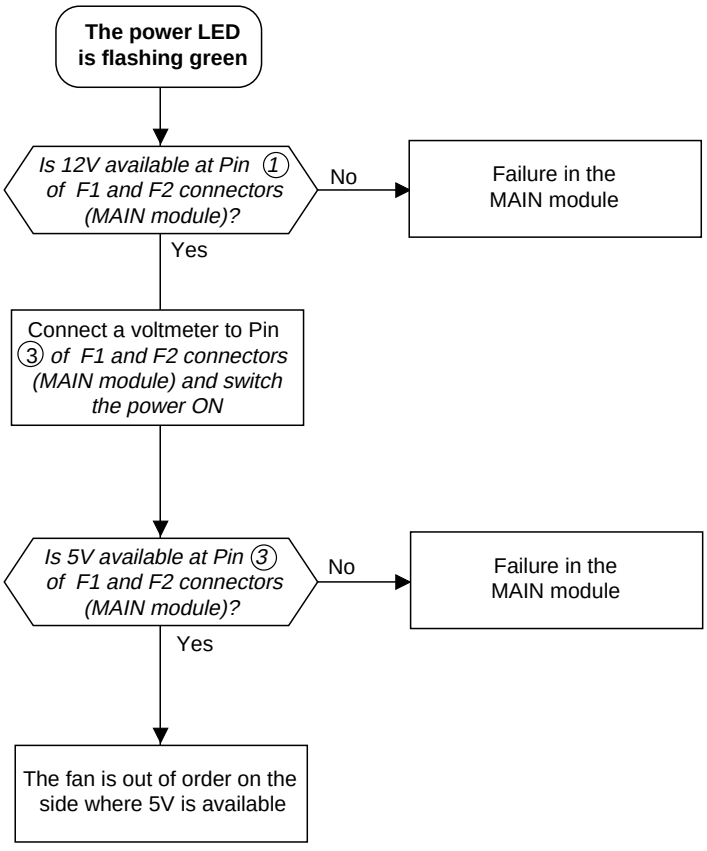


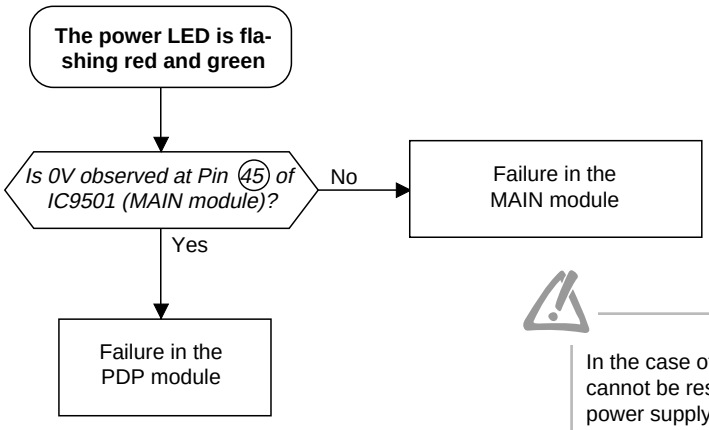
DIAGNOSTIC

The power LED located on the front of the display is a bicolour LED wich indicates the operating status including the normal, standby and three error detections



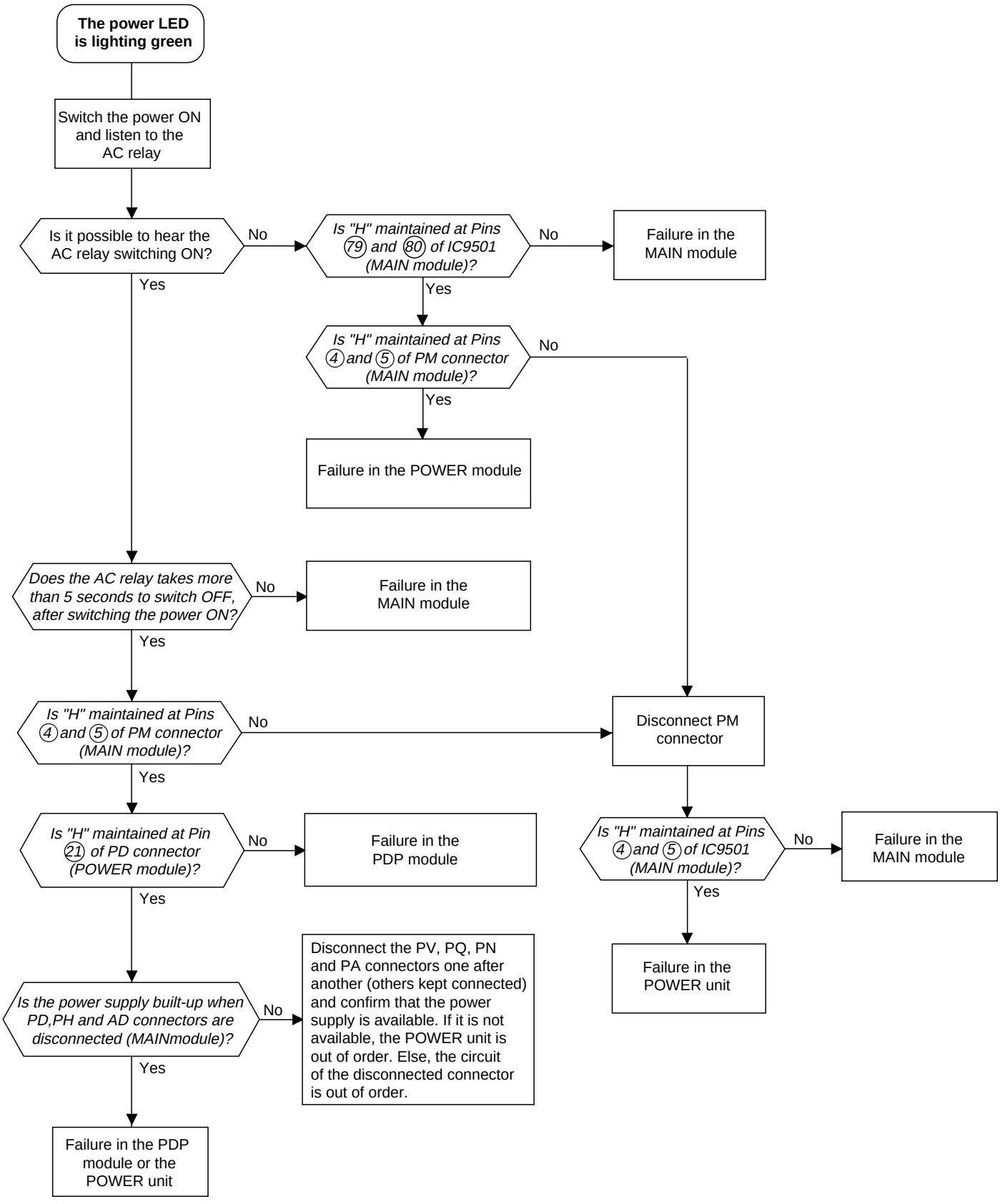

Power LED unlit
Is the power plug correctly connected to the wall outlet?
No
Rearrange the power plug connection correctly.
Yes
Is there AC 100V behind the fuses F1 and F2?
No
Fuses F1 and F2 have blown out. Replace the fuses. If they blow out again, the POWER unit is out of order
Yes
Are there M+14V output at Pin ① and M+7V output at Pin ③ of the PM connector?
No
Try to disconnect the PW, PQ, and RS connectors from one after another. If the outputs of M+14V and M+7V are found available, the circuits beyond these connectors are out of order. If no outputs are found, the POWER unit is out of order.
Yes
Is there +5V output at Pin ② of IC9504 (MAIN module)?
No
Failure in the PWR module
Yes
Is there an output of +5V at Pin ⑤ of the LD connector, Pin ④ of the PW connector and pin ⑤ of the RS connector?
No
Failure in +5V line. Check the LED, PWR and RS232C modules
Yes
Failure in the MAIN module
The power LED is flashing red
Is 0V observed at Pin ⑨⑨ of IC9501 (MAIN module)?
No
Failure in the MAIN module
Yes
Failure in the POWER unit


The power LED is flashing green
Is 12V available at Pin (1) of F1 and F2 connectors (MAIN module)?
No
Failure in the MAIN module
Yes
Connect a voltmeter to Pin (3) of F1 and F2 connectors (MAIN module) and switch the power ON
Is 5V available at Pin (3) of F1 and F2 connectors (MAIN module)?
No
Failure in the MAIN module
Yes
The fan is out of order on the side where 5V is available

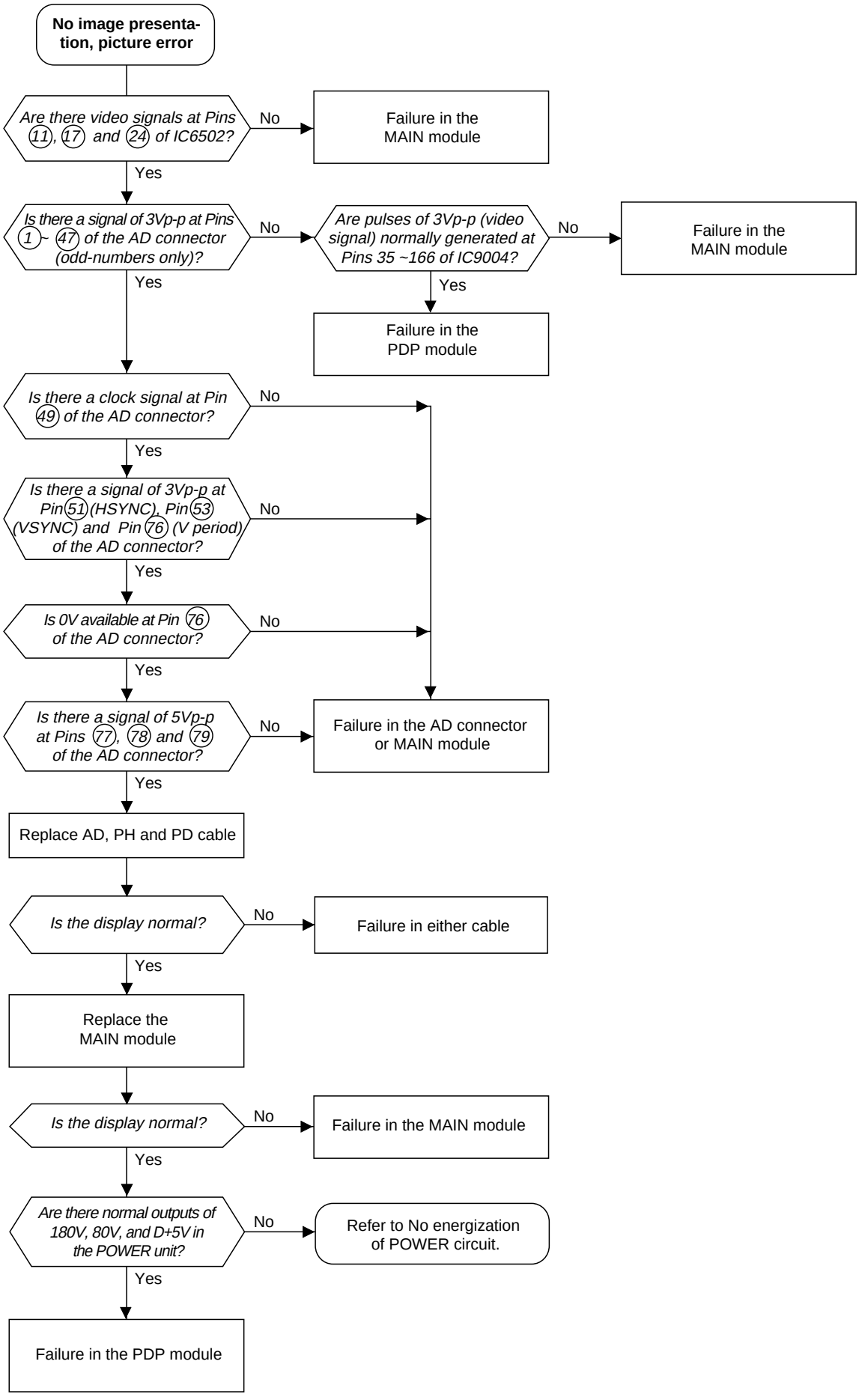

The power LED is flashing red and green
Is 0V observed at Pin (45) of IC9501 (MAIN module)?
No
Failure in the MAIN module
Yes
Failure in the PDP module

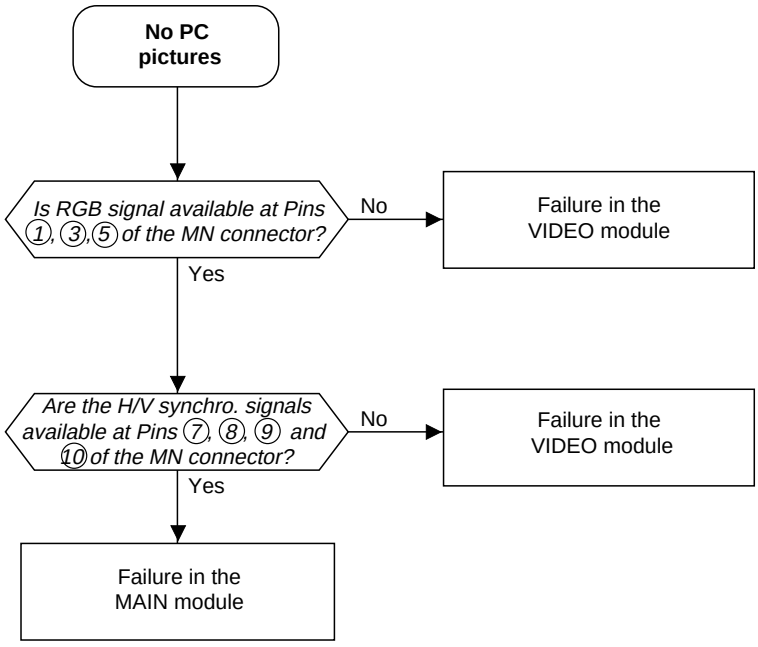
In the case of green and red flashing, the power supply cannot be reset with the OFF/ON operation at the mains power supply, remote control, and wall outlet.

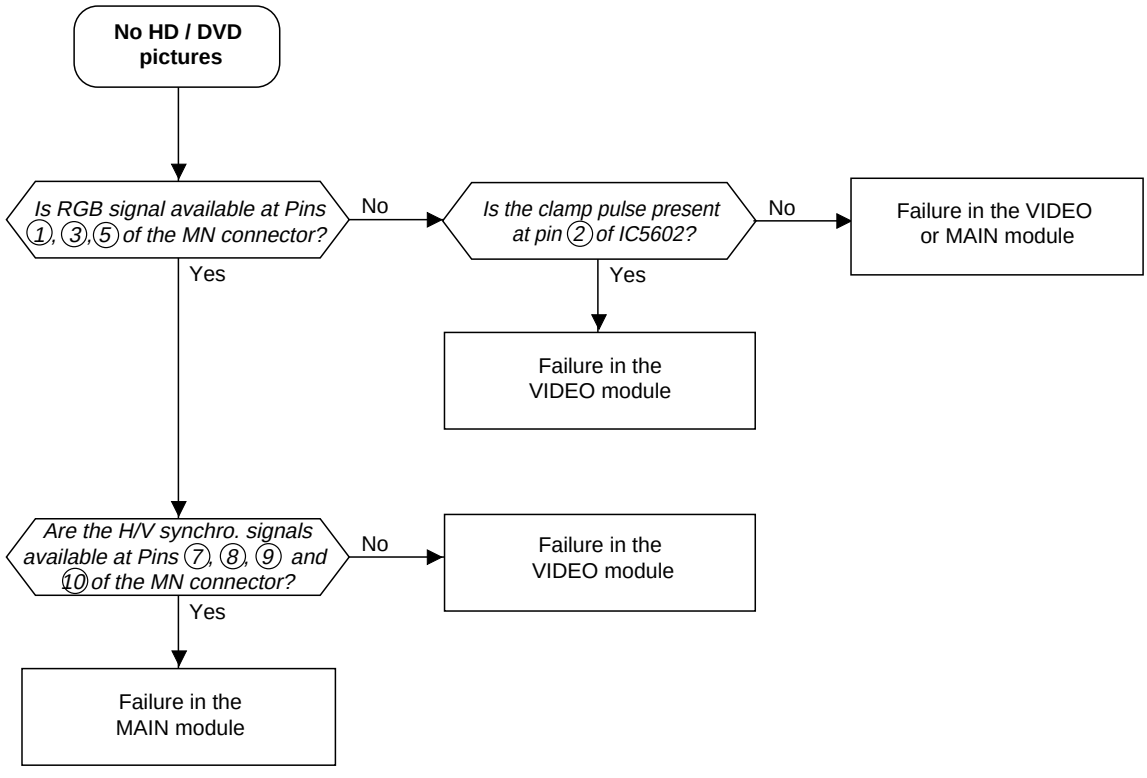
For the alarm reset, keep pressing the input changeover key of the main unit and move the mains power supply to the "ON" position at the main unit. While doing so, it is necessary to keep pressing the input changeover key of the main unit for more than two seconds.In the case of green and red flashing, the power supply cannot be reset with the OFF/ON operation at the mains power supply, remote control, and wall outlet.

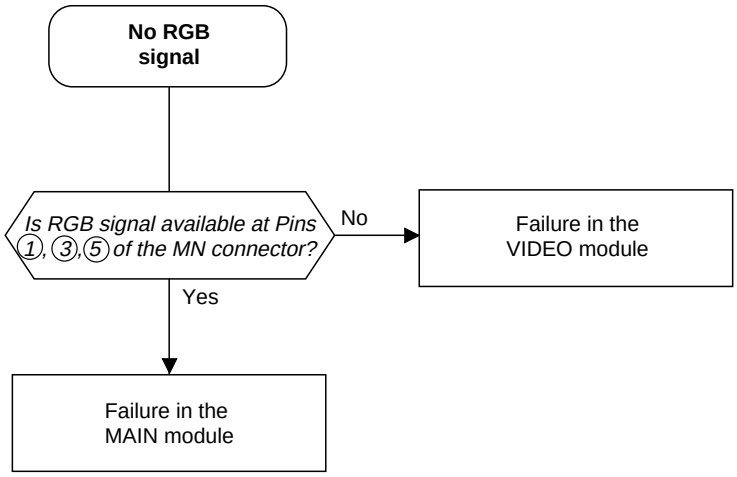

The power LED is lighting green
Switch the power ON and listen to the AC relay
Is it possible to hear the AC relay switching ON?
No
Yes
Is "H" maintained at Pins (79) and (80) of IC9501 (MAIN module)?
No
Failure in the MAIN module
Yes
Is "H" maintained at Pins (4) and (5) of PM connector (MAIN module)?
No
Yes
Failure in the POWER module
Does the AC relay takes more than 5 seconds to switch OFF, after switching the power ON?
No
Failure in the MAIN module
Yes
Is "H" maintained at Pins (4) and (5) of PM connector (MAIN module)?
No
Disconnect PM connector
Yes
Is "H" maintained at Pin (21) of PD connector (POWER module)?
No
Failure in the PDP module
Yes
Is "H" maintained at Pins (4) and (5) of IC9501 (MAIN module)?
No
Failure in the MAIN module
Yes
Failure in the POWER unit
Is the power supply built-up when PD,PH and AD connectors are disconnected (MAINmodule)?
No
Disconnect the PV, PQ, PN and PA connectors one after another (others kept connected) and confirm that the power supply is available. If it is not available, the POWER unit is out of order. Else, the circuit of the disconnected connector is out of order.
Yes
Failure in the PDP module or the POWER unit

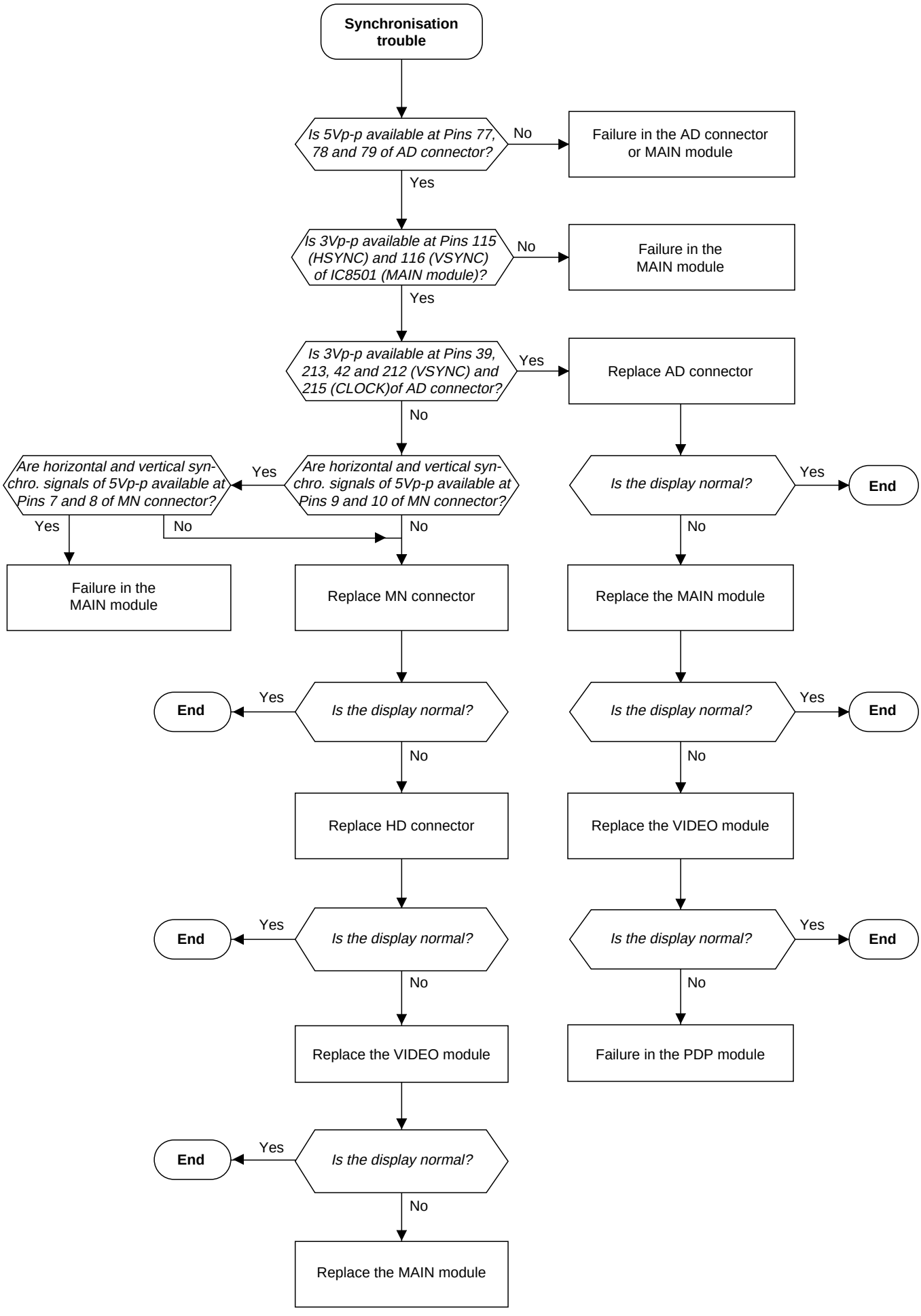
VIDEO TROUBLESHOOTING


No image presenta-tion, picture error
Are there video signals at Pins (11), (17) and (24) of IC6502?
No
Failure in the MAIN module
Yes
Is there a signal of 3Vp-p at Pins (1)~ (47) of the AD connector (odd-numbers only)?
No
Are pulses of 3Vp-p (video signal) normally generated at Pins 35 ~166 of IC9004?
No
Failure in the MAIN module
Yes
Failure in the PDP module
Yes
Is there a clock signal at Pin (49) of the AD connector?
No
Yes
Is there a signal of 3Vp-p at Pin(51)(HSYNC), Pin(53) (VSYNC) and Pin (76) (V period) of the AD connector?
No
Yes
Is 0V available at Pin (76) of the AD connector?
No
Yes
Is there a signal of 5Vp-p at Pins (77), (78) and (79) of the AD connector?
No
Failure in the AD connector or MAIN module
Yes
Replace AD, PH and PD cable
Is the display normal?
No
Failure in either cable
Yes
Replace the MAIN module
Is the display normal?
No
Failure in the MAIN module
Yes
Are there normal outputs of 180V, 80V, and D+5V in the POWER unit?
No
Refer to No energization of POWER circuit.
Yes
Failure in the PDP module

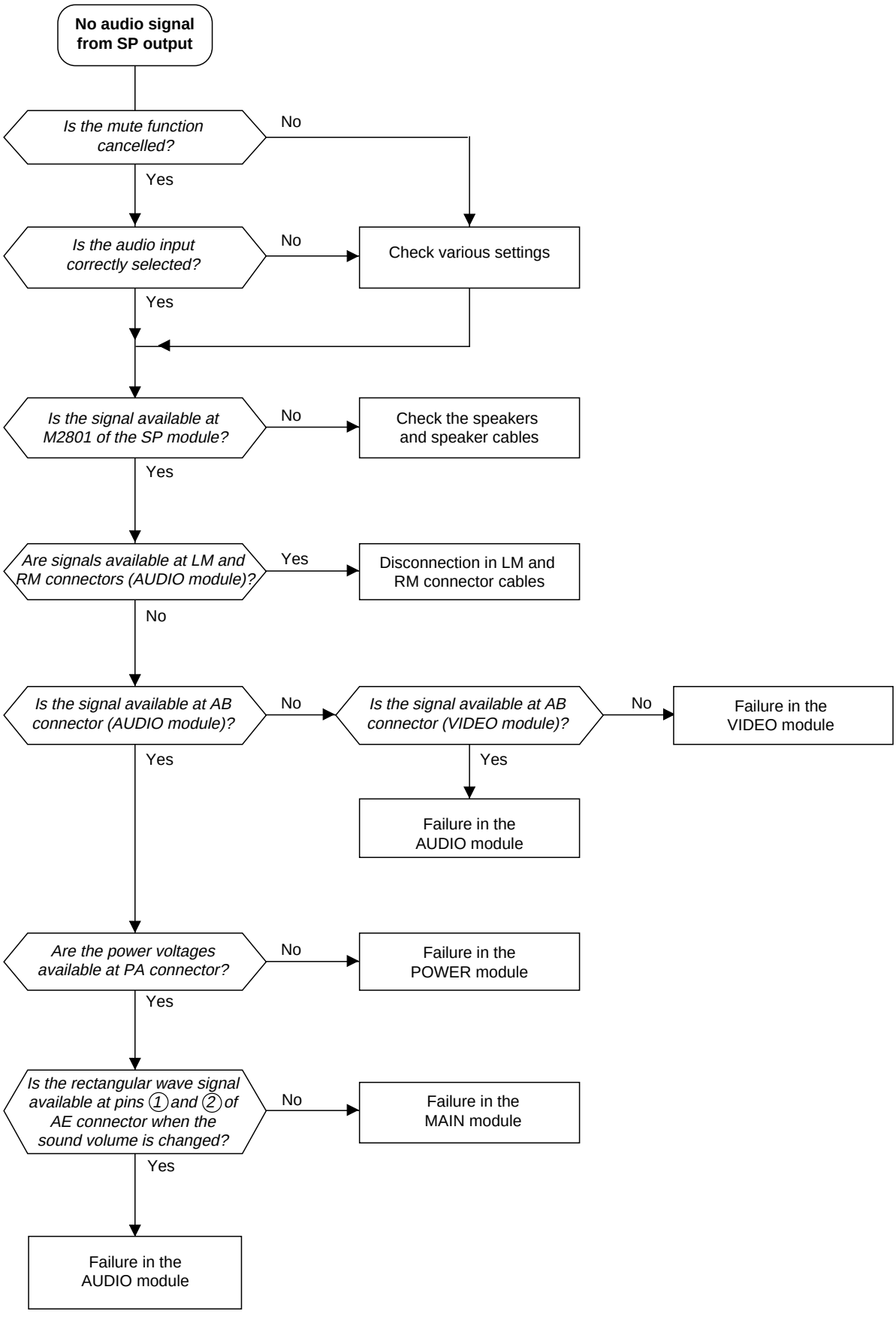

No PC pictures
Is RGB signal available at Pins ①, ③, ⑤ of the MN connector?
No
Failure in the VIDEO module
Yes
Are the H/V synchro. signals available at Pins ⑦, ⑧, ⑨ and ⑩ of the MN connector?
No
Failure in the VIDEO module
Yes
Failure in the MAIN module


No HD / DVD pictures
Is RGB signal available at Pins ①, ③, ⑤ of the MN connector?
No
Is the clamp pulse present at pin ② of IC5602?
No
Failure in the VIDEO or MAIN module
Yes
Failure in the VIDEO module
Yes
Are the H/V synchro. signals available at Pins ⑦, ⑧, ⑨ and ⑩ of the MN connector?
No
Failure in the VIDEO module
Yes
Failure in the MAIN module


No RGB signal
Is RGB signal available at Pins ①, ③, ⑤ of the MN connector?
No
Failure in the VIDEO module
Yes
Failure in the MAIN module


Synchronisation trouble
Is 5Vp-p available at Pins 77, 78 and 79 of AD connector?
No
Failure in the AD connector or MAIN module
Yes
Is 3Vp-p available at Pins 115 (HSYNC) and 116 (VSYNC) of IC8501 (MAIN module)?
No
Failure in the MAIN module
Yes
Is 3Vp-p available at Pins 39, 213, 42 and 212 (VSYNC) and 215 (CLOCK)of AD connector?
Yes
Replace AD connector
No
Are horizontal and vertical synchro. signals of 5Vp-p available at Pins 9 and 10 of MN connector?
Yes
Are horizontal and vertical synchro. signals of 5Vp-p available at Pins 7 and 8 of MN connector?
Yes
No
Failure in the MAIN module
No
Replace MN connector
Is the display normal?
Yes
End
No
Replace HD connector
Is the display normal?
Yes
End
No
Replace the VIDEO module
Is the display normal?
Yes
End
No
Replace the MAIN module
Is the display normal?
Yes
End
No
Replace the MAIN module
Is the display normal?
Yes
End
No
Replace the VIDEO module
Is the display normal?
Yes
End
No
Failure in the PDP module

AUDIO TROUBLESHOOTING


No audio signal from SP output
Is the mute function cancelled?
No
Yes
Is the audio input correctly selected?
No
Check various settings
Yes
Is the signal available at M2801 of the SP module?
No
Check the speakers and speaker cables
Yes
Are signals available at LM and RM connectors (AUDIO module)?
Yes
Disconnection in LM and RM connector cables
No
Is the signal available at AB connector (AUDIO module)?
No
Is the signal available at AB connector (VIDEO module)?
No
Failure in the VIDEO module
Yes
Yes
Failure in the AUDIO module
Are the power voltages available at PA connector?
No
Failure in the POWER module
Yes
Is the rectangular wave signal available at pins ① and ② of AE connector when the sound volume is changed?
No
Failure in the MAIN module
Yes
Failure in the AUDIO module

ADJUSTMENTS

ADJUSTMENTS NECESSARY AFTER REPLACEMENT OF MODULES:
- After replacement of MAIN module, perform the adjusments of "video screen position" and "DVD/HD/DTV screen position".
- After replacement of POWER or PDP module , perform the adjusment of "+170V/+70V" and "+5V". When replacing PDP module, the "usage time" should be reset (as shown below)

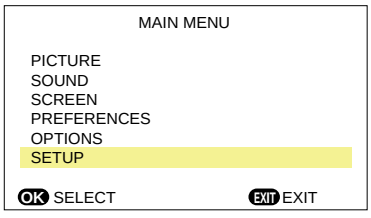
Replacing another module does not require further adjustment unless abnormal conditions are encountered.

OSD CONTROLS

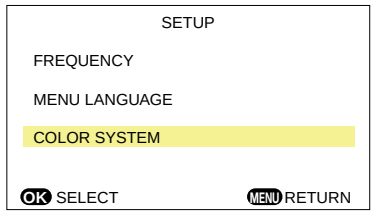
Before entering the service mode, it could be necessary to configure the plasma monitor in the On Screen menu.

ACCESSING COLOR STANDARD

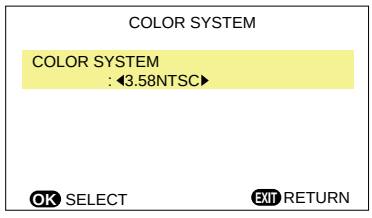
- Using the remote control, press "menu" button.
- The "main" menu appears on the screen.



- Press the ⌃ / ⌄ buttons to select the "setup" line.
- The "setup" menu appears on the screen.



- Select the "color system" line.
- The "color system" menu appears on the screen.



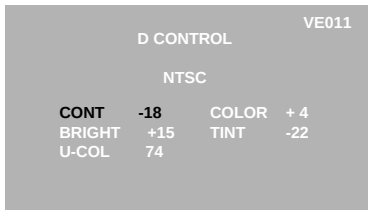
- Press the ⟨ / ⟩ buttons to select the color standard.

SERVICE MODE

It is necessary to enter the Service Mode in order to carry out alignment of the set. Most adjustments must be made with the RCU.

1 ACCESSING SERVICE MODE

- Using the remote control, press successively the zoom "-" (🔍-), exit, mute (🔇) and zoom "-" (🔍-) buttons.
- The main service menu appears on the screen.



2 NAVIGATION INSIDE THE SERVICE MODE

- Press the "menu" button to select the menu.
- Press the ⌃ / ⌄ buttons to select the menu line.
- Press the ⟨ / ⟩ buttons to make adjustments.

NB : the value of the adjustment is memorized automatically.

3 EXITING FROM SERVICE MODE

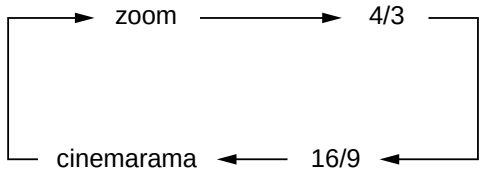
- To exit the service mode menu press successively, the zoom "-" (🔍-), exit, mute (🔇) and zoom "-" (🔍-) buttons on the remote control.

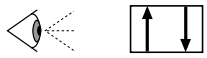
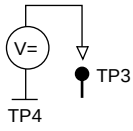
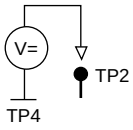
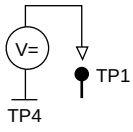
4 CLEARING THE USAGE TIME

- Enter the service mode and select the "usage time" menu,
- Using the remote control, press successively the mute (🔇), ⌃ , ⌄ , and zoom "-" (🔍-) buttons.

ZOOM SEQUENCE

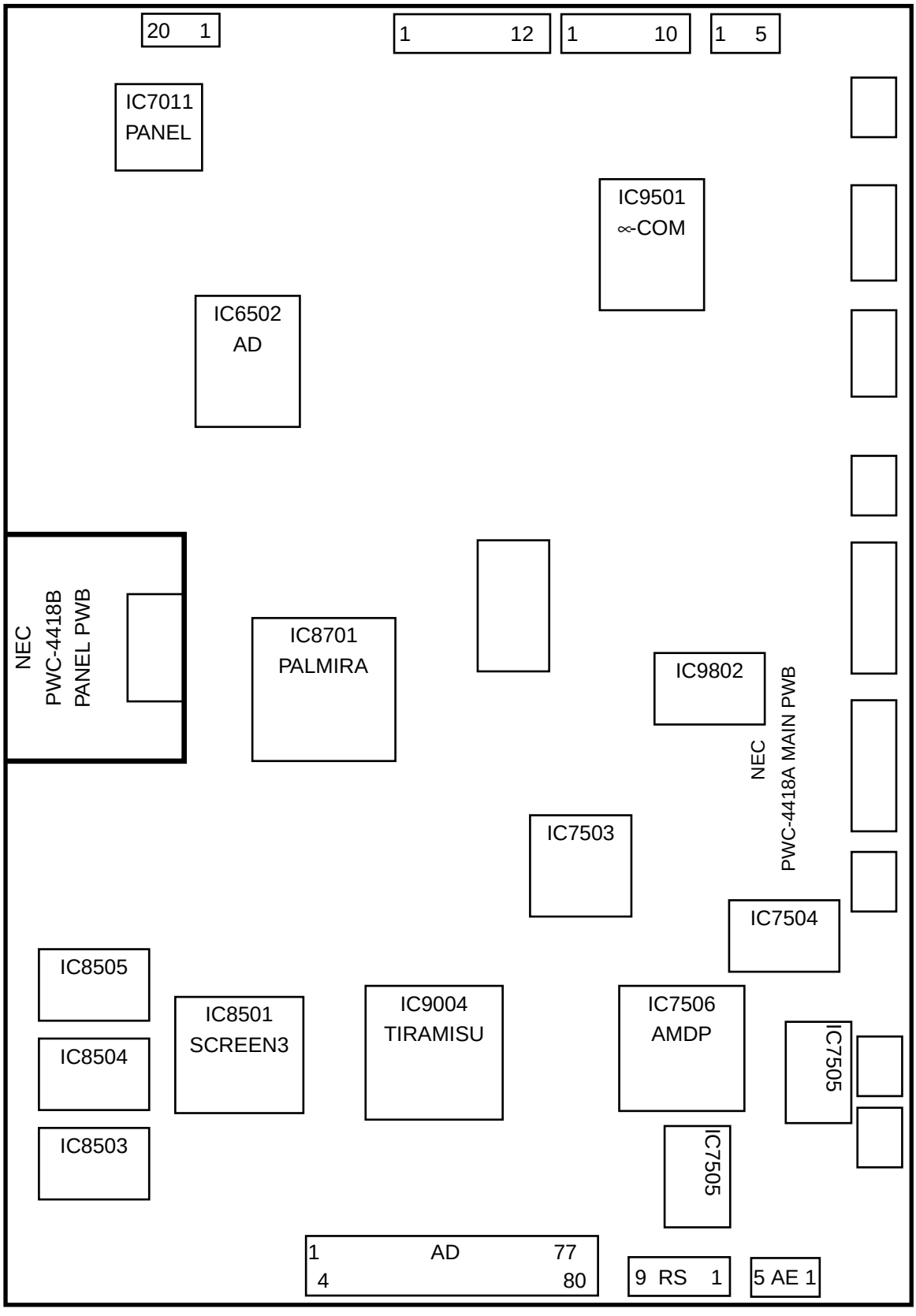
It could be necessary to change the zoom mode in order to carry out some alignments of the set. Press the "format" button of the remote control. The mode switches as shown in the margin.

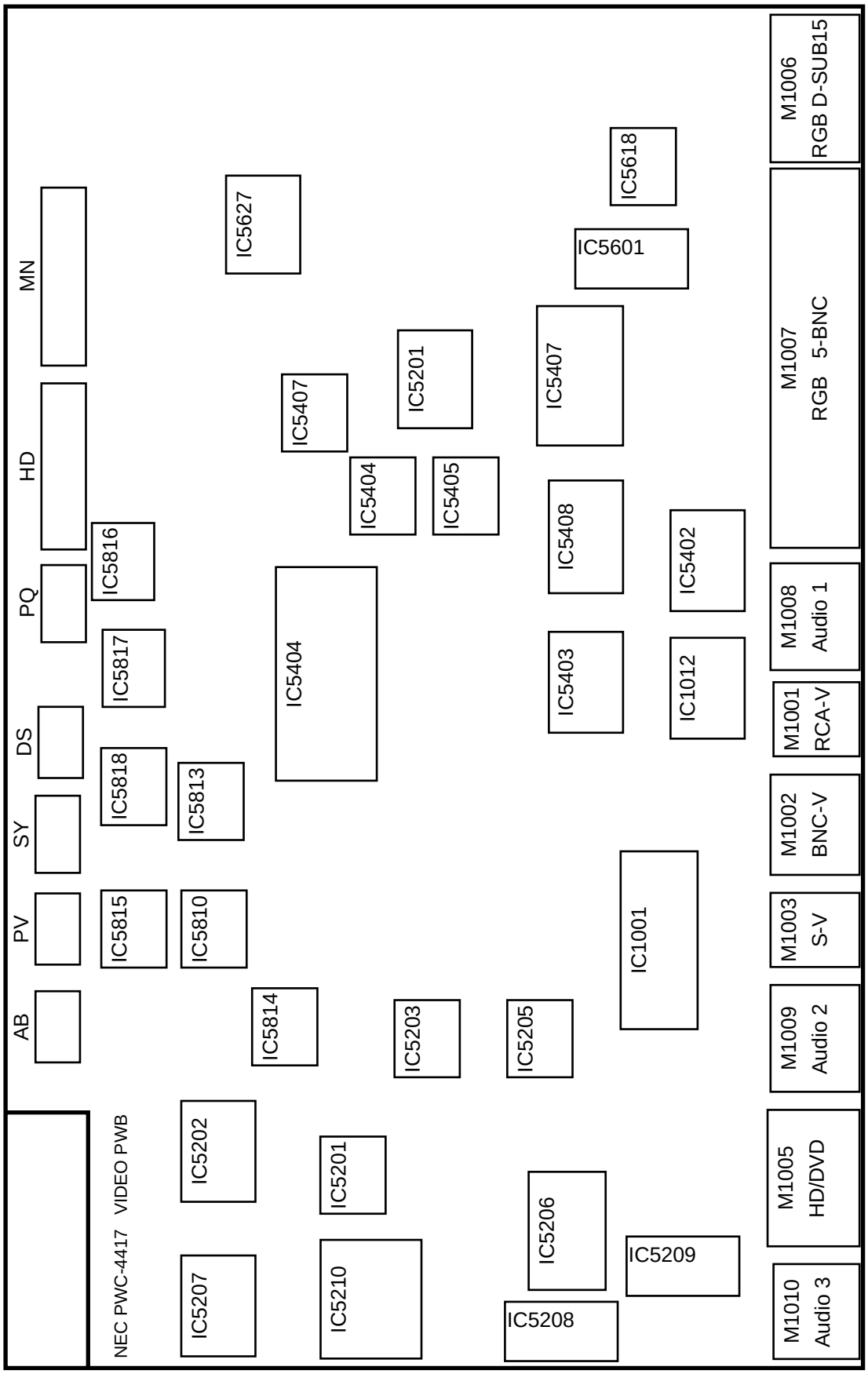


MAIN Video screen position	SERVICE MODE "POSITION" menu	NTSC test pattern : Select VIDEO input with the Remote Control or keyboard Select "cinerama" with the "format" key of the Remote Control	If there is any displacement of the display range in the PDP module, select "MHPOS" and "MVPOS" lines, and adjust correctly. Select "H POS" line and adjust Select "V POS" line and adjust  Check that "H PHA" = 0 and "H CLK" = 0 Adjust separate for zoom; 4/3; 16/9 and PAL; SECAM.	
MAIN DVD/HD/DTV screen position	SERVICE MODE "POSITION" menu	DDTV test pattern : Select RGB2 input with the Remote Control or keyboard Select "cinerama" with the "format" key of the Remote Control	If there is any displacement of the display range in the PDP module, select "MHPOS" and "MVPOS" lines, and adjust correctly. Select "H POS" line and adjust Select "V POS" line and adjust Check that "H PHA" = 0 and "H CLK" = 0 Adjust separate for zoom; 4/3; 16/9 and PAL; NTSC.	
POWER +170V +70V	RV4	Apply colour bar test pattern to either Video, HD/DVD or VGA input Power switched ON		Adjust RV4 to obtain the specified PDP module voltage value +/-1V at TP3 (+170V). This value is the Vs value indicated on the label pasted on the back of PDP module
	RV3			Adjust RV3 to obtain the specified PDP module voltage value +/-1V at TP2 (+70V). This value is the Vd value indicated on the label pasted on the back of PDP module
POWER +5V	RV6	Apply colour bar test pattern to either Video, HD/DVD or VGA input		Adjust "RV6" : V = 5.1 V +/- 0.1 V

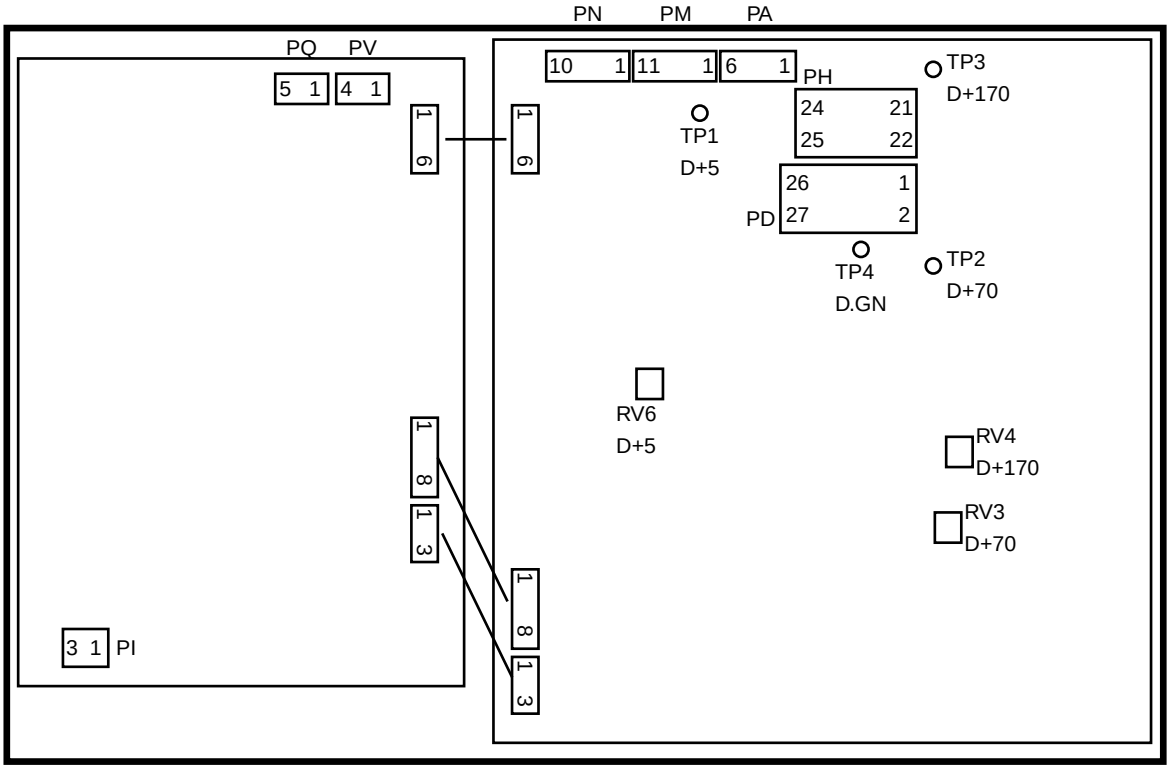
ADJUSTMENT LOCATION

MAIN module



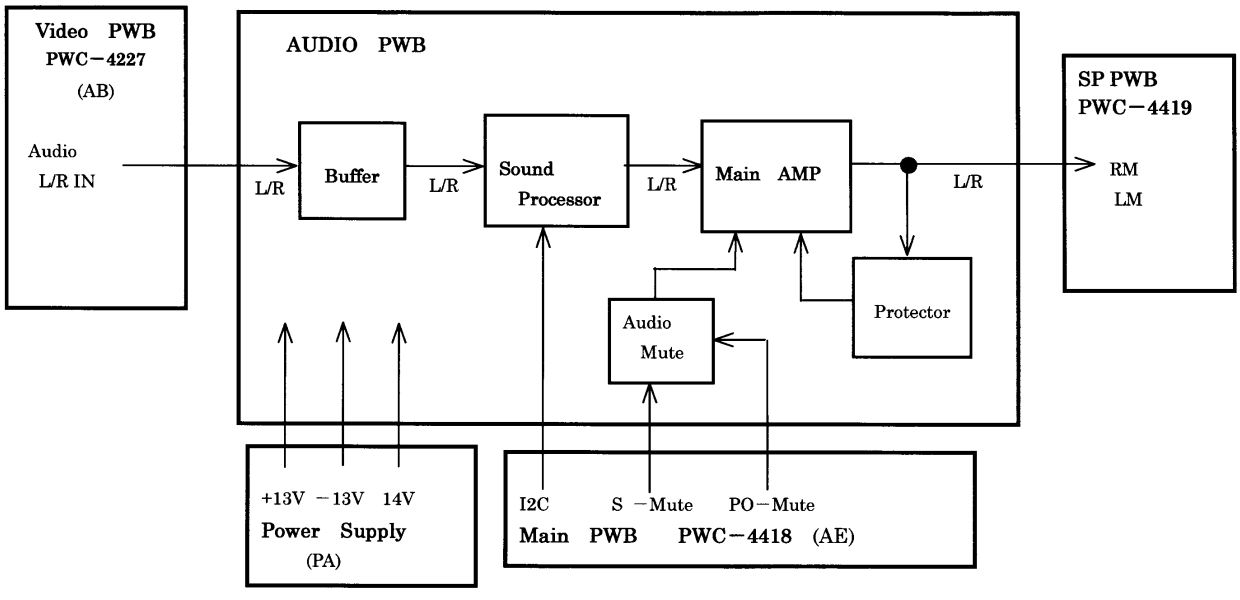

NEC PWC-4417 VIDEO PWB
AB
PV
SY
DS
PQ
HD
MN
IC5202
IC5207
IC5201
IC5210
IC5814
IC5815
IC5810
IC5813
IC5816
IC5817
IC5818
IC5404
IC5203
IC5205
IC5206
IC5208
IC5209
IC1001
IC5627
IC5407
IC5404
IC5201
IC5405
IC5403
IC5408
IC5407
IC5601
IC5618
IC1012
IC5402
M1005 HD/DVD
M1009 Audio 2
M1003 S-V
M1002 BNC-V
M1001 RCA-V
M1008 Audio 1
M1007 RGB 5-BNC
M1006 RGB D-SUB15
M1010 Audio 3

POWER module

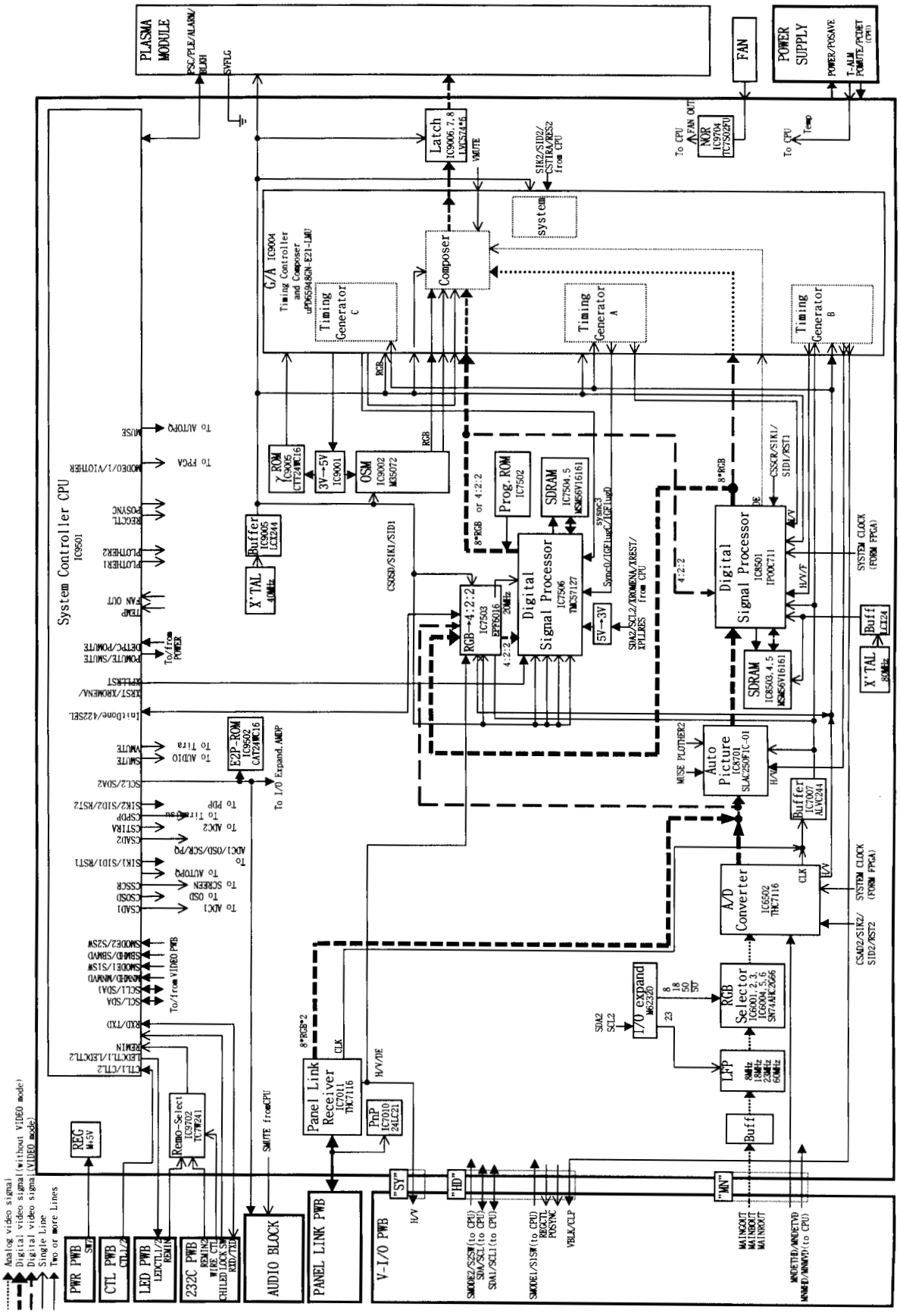


BLOCK DIAGRAMS

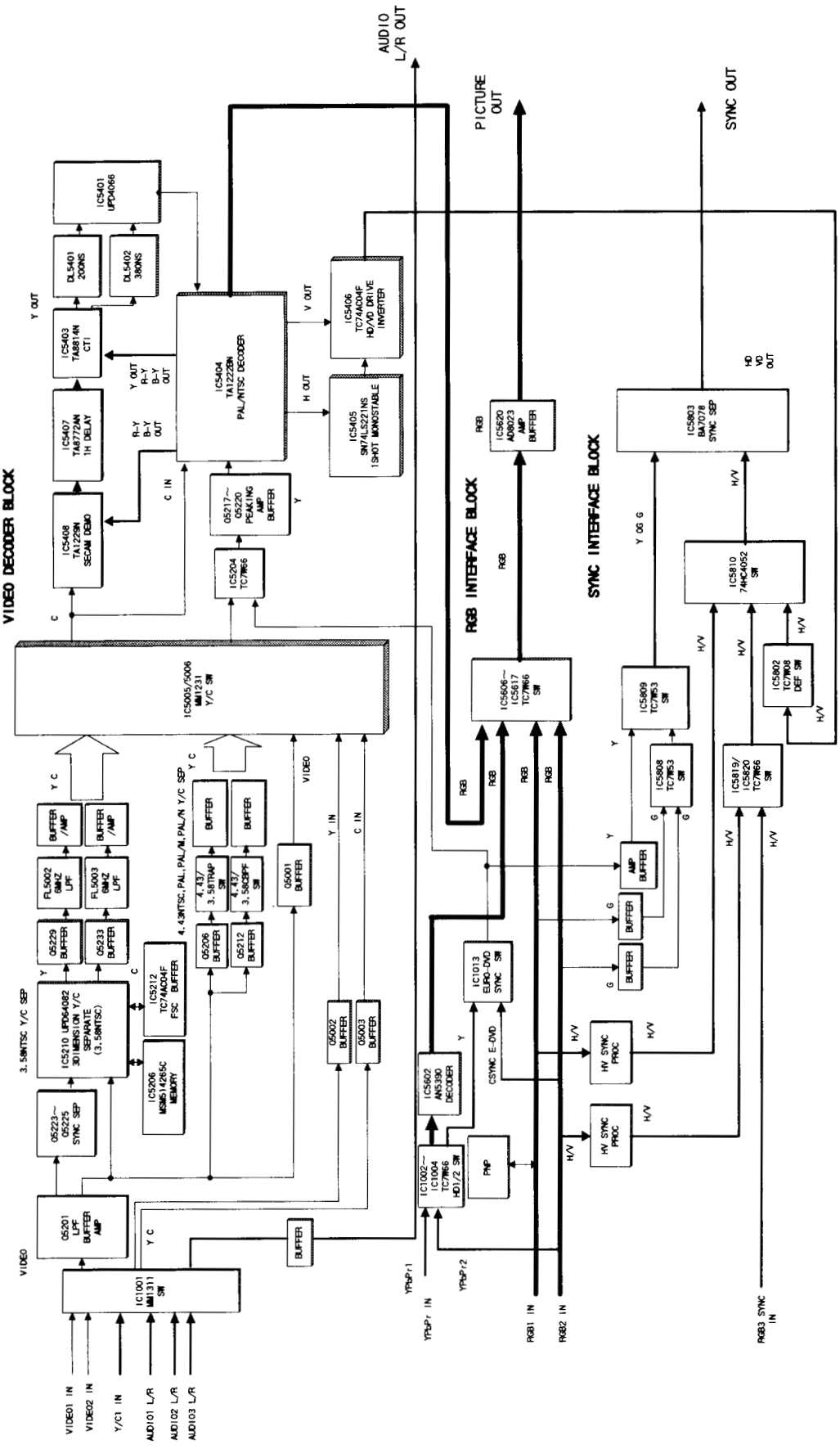
AUDIO module



MAIN module


PLASMA MODULE
FAN
POWER SUPPLY
Latch IC9006, 7, 8 LVQ574*6
NOR IC9704 TC7S02FU
C/A IC9004 Timing Controller and Composer uPD65948GM-E21-LML
Timing Generator C
Timing Generator A
Timing Generator B
Composer
system
System Controller CPU IC9501
Buffer IC9005 LCX244
X'TAL 40MHz
3V→5V IC9001
OSM IC9002 M55072
Prog. ROM IC7502
SDRAM IC7504, 5 HM66V16161
RGB→4:2:2 IC7503 EPF6016 20MHz
Digital Signal Processor IC7506 TMS37127
5V→3V
Digital Signal Processor IC8501 IPOOC711
SDRAM IC8503, 4, 5 HM66V16161
X'TAL 80MHz
Buff LCX24
E2P-ROM IC9502 CAT24WC16
Auto Picture IC8701 SLAC250MIC-01
Buffer IC7007 ALVC244
A/D Converter IC6502 THC7116
I/O expand MC2320
RGB Selector IC6001, 2, 3, IC6004, 5, 6 SN74ABIC2666
LPF
Buff
Panel Link Receiver IC7011 THC7116
PnP IC7010 24LC21
Remo-Con Select IC9702 TC7W241
REG M+5V
PWR PWB
CTL PWB
LED PWB
2320 PWB
AUDIO BLOCK
PANEL LINK PWB
V-I/O PWB
"SY"
"HD"
"MN"
Analog video signal
Digital video signal (without VIDEO mode)
Digital video signal (VIDEO mode)
Single Line
Two or more Lines

VIDEO module



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